

Work Order ID 133782

Tuesday, November 29, 2016 10:17:04 AM

133782

Page 1

Item ID: D6020-160

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Crosstube Material

Start Date: 6/17/2015 Start Qty: 21.00

21

Cust Item ID:

Required Date: 12/21/2015 Req'd Qty: 21.00

21

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6020	pa3 Rev A								
110	PURCHASING	0.00							
110									
Purchasing	Memo	0.00							
Purchasing	Issue P/O: 28800								
	Manufacture as per dwg D6020								
120	Receive & Inspect for Damage & Mat'l Certs	0.00							
120									
Packaging	Memo	0.00							
Packaging	Ensure material certification is attached								
130	QC6- Inspect dimensions to drawing	0.00							
130									
QC	Memo	0.00							
Quality Control	Ensure Material certification comply to Dwg								

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Item ID: D6020-160

Accept

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Setup Start

NS1

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Stop

NS2

Item Name: Crosstube Material

Start Date: 6/17/2015 Start Qty: 21.00

21

Cust Item ID:

Required Date: 12/21/2015 Req'd Qty: 21.00

21

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140 *140* Outsource1 Outsource process - Heat Treat	Outsource process - Heat Treat Memo Issue p/o: Ensure Material certification	0.00 0.00							
150 *150* Packaging Packaging	Receive & Inspect for Damage & Mat'l Certs Memo Ensure Material certification	0.00 0.00							
160 *160* QC Quality Control	QC6- Inspect dimensions to drawing Memo	0.00 0.00							

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Item ID: D6020-160 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Crosstube Material
Start Date: 6/17/2015 Start Qty: 21.00 ***21*** Cust Item ID:
Required Date: 12/21/2015 Req'd Qty: 21.00 ***21*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	Identify as per dwg & Stock Location: <i>Shen</i>	0.00							
190									
Packaging	Memo	0.00							
Packaging									
200	QC21- Final Inspection - Work Order Release	0.00							
200									
QC	Memo	0.00							
Quality Control									

JW 16-11-29

W 16-11-29

DAS 21 9-89
DEC 02 2016
NOV 30 2016

Picklist Print

Tuesday, November 29, 2016 10:17:04 AM

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Work Order ID: 133782

133782

Parent Item: D6020-160

D6020-160

Parent Item Name: Crosstube Material

Start Date: 6/17/2015

Required Date: 12/21/2015

Start Qty: 21.00

Required Qty: 21.00

Comments: IPP REV:A 13.03.06 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6020-160P		Purchased	No				Each	0.0000		21			
D6020-160P Crosstube Material													
									**				



STATEMENT OF CONFORMANCE

Dart Aerospace Ltd.
1270 Aberdeen
Hawkesbury, ON K6A 1K7

Part #: D6020-160P
Material: 17-4 PH
Report Serial #: See Table below
Heat #: See Table below
Drawing #: D6020 Rev. A
P.O #: PO28800 L/13
THI WO#: 150624/01
Qty: 5

Material Cert Report Serial Number:	Heat #:	Serial Number:
2051886/1495185/daniel	550620	38, 39
DNK-0066998-G22575-81115	G22575	41, 42
DNK-0066998-G22508-81369	G22508	40

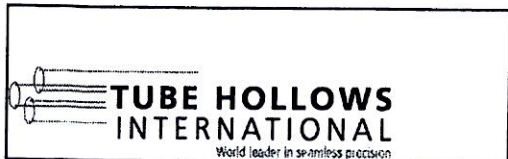
The above-mentioned parts have been inspected and conform to customer contract, purchase order, drawing, and other required specifications. All exceptions are noted below. Inspection data and all certifications are kept on file and available for review upon customer request.

Comments: This is the balance of PO# PO28800
SN 38 OAL 161.1" SN 39 OAL 161.1" SN40 OAL156.0" SN 41 OAL 158.9"
SN 42 OAL 158.5".

Inspected / Certified By:

Christine Plummer, Quality Dept. March 31, 2016

PACKING LIST



39 Enterprise Drive # 2 Windham, ME 04062
Phone 207.892.8899 Fax 207.892.8863

Packlist ID: 01679
Date: 3/31/2016
Page: 1

Sold To Address

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

Ship To Address

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY K6A 1K7
CANADA

			CUSTOMER PO		PAYMENT TERMS		F.O.B.	
			28800		Net 30		WINDHAM	
SALES REP ID			SHIPPING METHOD		SHIP DATE		OUR ORDER NUMBER	
EVAN			JOURNEY FREIGHT		3/31/2016		DAR150141	
QUANTITY								
ORD	SHP	BCK	PART ID	DESCRIPTION				

21.00 5.00 0.00 CROSSTUBE

160" CROSSTUBE
Drawing: D6020-160P
Unit of Measure: EA
Legacy Part No.:

Rev No.:

THI SUPPLIED 17-4 PH MATERIAL MACHINED PER DRAWING# D6020 REV. A.

S/N: 38, 39, 40, 41, 42

RE: THI WO# 150624/01

THANK YOU FOR THIS ORDER.

RECEIVED BY: _____

**Castle Metals®**

A. M. Castle & Co.

**PACKING SLIP/
CERTIFICATE OF CONFORMANCE**

Page 1 of 1

Pack Slip No:2318999

Ship From: A. M. Castle & Co. Philadelphia 299 Canal Road Fairless Hills, PA 19030		Sold To: TUBE HOLLOW INTERNATIONAL 39 ENTERPRISE DRIVE, SUITE 2 WINDHAM, ME 04062 US		Ship To: TUBE HOLLOW INTERNATIONAL 39 ENTERPRISE DRIVE, SUITE 2 WINDHAM, ME 04062 US		Deliver To: TUBE HOLLOW INTERNATIONAL 39 ENTERPRISE DRIVE, SUITE 2 WINDHAM, ME 04062 US	
Date Shipped	F.O.B.	Freight Terms		Carrier	BOL No	Delivery No	
18-FEB-2016	ORIGIN	Prepaid		LOCAL_FLEET	2329630	120344796	

Shipment Details				Final Destination Branch -			
Order No	Line No	Item No	Description				
4218948	1	72313.BO	3.5000.RD.17CR-4NI.STAINLESS.RT.H1025.161 SPECIFICATIONS: ASTM A564 Cond H1025 ✓				
Purchase Order No		Part Number		Ordered Qty		Invoice Qty	
TH-0615-529 ✓				2.00 PCS		896.0000 LBS	
Details							
Mill	Heat Number	Mech ID	PCS	Width (IN)	Length (IN)	Shipped Qty (LBS)	
	550620		2 ✓		161.0000	896.0000	
These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited. We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.							
Reviewed by Authorized Castle Metals Representative:			Key #620439 - Rec'd		Date: 2/19/16 Name:		

cert OK 2/24/16
 Todd [Signature] WO# 150624/01



Castle Metals®

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 1

Shipment No:2888720

Ship From: A. M. CASTLE & CO. 299 CANAL ROAD FAIRLESS HILLS, PA 19030 USA		Sold To: TUBE HOLLOW INTERNATIONAL 39 ENTERPRISE DRIVE, SUITE 2 WINDHAM, ME 04062 US		Ship To: TUBE HOLLOW INTERNATIONAL 39 ENTERPRISE DRIVE , SUITE 2 WINDHAM, ME 04062 USA		Deliver To: TUBE HOLLOW INTERNATIONAL 39 ENTERPRISE DRIVE , SUITE 2 WINDHAM, ME 04062 US	
Date Shipped 18-FEB-16	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier TQ LOGISTICS		BOL No 2888720-4	

Shipment Details	Final Destination Branch - PHI
-------------------------	---------------------------------------

Order No 4045595	Line No 1	Item No 72313.BO	Description 3.5000.RD.17CR-4NI.STAINLESS,PT.H1025.160.000 +2.000 -.000 SPECIFICATIONS: ASTM A564 Cond H1025
Purchase Order/No TH-0615-529		Part Number	Ordered Qty 42.00 PCS
			Invoice Qty 1279.0000 LBS

Details							
Delivery No.	Mill	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
120344650		 Key # 620440		1 ✓		156.0000	421.0000
120344655		 Key # 620441 Rec'd 2/19/16		2 ✓		158.0000	858.0000

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.			
We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.			
Reviewed by Authorized Castle Metals Representative:	<i>CERT GRAD</i> <i>Todd Gentry</i> 2/24/16	Date:	Name:

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All amounts are calculated in domestic currency.

All Vendors PO ID po28800 All Receipt Dates All Line Item Types
Purchased/Mfg: D6020-160P All Rec. Employees All Currencies
Grouped by Vendor ID

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
VendorID\Vendor Name		VU-THI01	Tube Hollows International								
PO28800	1		D6020-160P	Each	1/4/2016	1/5/2016	7.0000		0.0000	0	\$0.00
USD	No		Crosstube Material	Each	7.0000	DCUSER			0.0000	0	
			m133926/133623								
					1/26/2016	1/14/2016	8.0000		0.0000	0	\$0.00
					14.0000	PLOU01			0.0000	0	
					1/26/2016	1/20/2016	6.0000		0.0000	0	\$0.00
					14.0000	PLOU01			0.0000	0	
	3		D6020-160P	Each	4/11/2016	4/8/2016	5.0000		0.0000	0	\$0.00
	No		Crosstube Material	Each	5.0000	PLOU01			0.0000	0	
			m134529/133782								
					2/2/2016	1/20/2016	2.0000		0.0000	0	\$0.00
					16.0000	PLOU01			0.0000	0	
					2/2/2016	2/3/2016	14.0000		0.0000	0	\$0.00
					16.0000	PLOU01			0.0000	0	
Total Received Quantity:										42.0000	
Total Qty to Inspect (PO U/M):										0.0000	
Total Reject Quantity:										0.0000	
Total Receipt Value:										\$0.00	
Total Balance Due Quantity:										0.0000	

Work Order Summary

Friday, November 25, 2016 11:21:34 AM

Page 1 of 1

Criteria : Work Order ID: 133782 Item ID: D6020-160 Product Family CROSSTUBES
 Work Order Start Dates 6/17/2015 to 6/17/2015 11:59:59 PM Work Order Required Dates 12/21/2015 to 12/21/2015 11:59:59 PM
 All References
 Work Order Status Complete

Work Order ID	133782	Required Qty	21.0000	Status Code	Complete
Item ID	D6020-160	Accepted Qty	16.0000	Scrap Qty	0.0000
Item Name	Crosstube Material				
Current Acct Value	\$3,878.333				
Start Date	6/17/2015	Required Date	12/21/2015	Completed Date	11/18/2016 8:39:11 AM

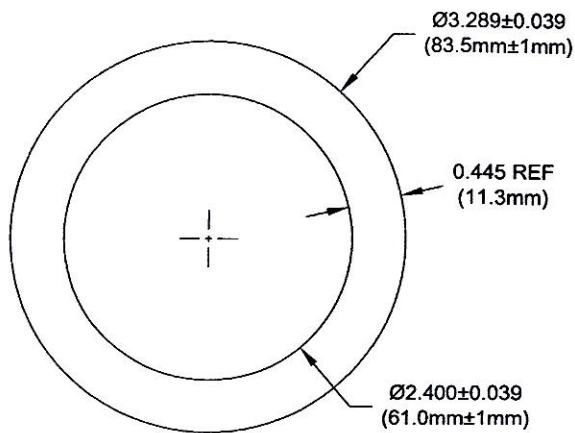
Standard	** Actual **		** Acct. Value **	** Variance **	** Variance % **
Direct Costs	Total	Each	Each	Each	Each
Material	\$73,300.500	\$4,581.281	\$3,524.300	(\$1,056.981)	-29.99%
Labor	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Outplant	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Variable Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Fixed Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Material Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
** Total **	\$73,300.500	\$4,581.281	\$3,524.300	(\$1,056.981)	

Item ID/Item Name	Required Qty	Issue Code	Issue Date	Issued Qty	Cost Amount
D6020-160P					
Crosstube Material					
	21.0000		4/11/2016	5.0000	\$17,452.500
	21.0000		2/3/2016	14.0000	\$48,867.000
	21.0000		1/20/2016	2.0000	\$6,981.000
			Total Matl Amts:		\$73,300.500

where is the
up of 5

387833
instead of
3490.50

SPECIFICATION CONTROL DRAWING



NOTES

1) D6020-XXX CROSSTUBE

LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 160" LONG TUBE: D6020-160

2) MATERIAL: 17-4PH SEAMLESS STAINLESS STEEL TUBE PER ASTM A564
 $\text{Ø}3.289$ O.D. x $\text{Ø}2.400$ I.D.

HEAT TREAT TO H1025 CONDITION (HRC 34-42):
MIN. ULTIMATE TENSILE STRENGTH = 155 ksi
MIN. YIELD TENSILE STRENGTH = 145 ksi

3) TOLERANCES ARE AS FOLLOWS:

ECCENTRICITY: 15% (+/-0.066" WALL)

LENGTH: XXX +0.188"/-0.000"

STRAIGHTNESS: 0.012" DEVIATION / 12" LENGTH

4) ALL DIMENSIONS ARE IN INCHES

5) TUBE MUST BE PICKLED OR ELECTROPOLISHED TO BE SMOOTH AND FREE FROM SCALE.

6) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

RELEASED
2013-08-14

A NEW ISSUE		CP	13.04.24
REV.	DESCRIPTION	BY	DATE
DESIGN	q		
DRAWN	q		
CHECKED	A.P.		
MFG. APPR.			
APPROVED	W		
DE APPR.	W		
DATE	13.04.24		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. A
DRAWING NO.	D6020	SHEET 1 OF 1
TITLE	CROSSTUBE MATERIAL	SCALE
		NTS

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